



A-71-72
VI-D-301
A-2001-07
IV-D-07

Alliant Lake City Small Caliber
Ammunition Company LLC
Lake City Army Ammunition Plant
P.O. Box 1000
Independence, MO 64051-1000

Tel 816 796-7101

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
(70993220000046937014)

July 8, 2003

JUL 14 1

Margaret Sheppard
Environmental Protection Agency
Mailcode 6205J
1200 Pennsylvania Ave., NW
Washington, DC 20460

Subject: SNAP application for n-Propyl Bromide

Dear Ms. Sheppard,

Lake City Army Ammunition Plant is submitting the enclosed SNAP application requesting that n-Propyl Bromide (nPB) be considered as a substitute in the coatings end use of the adhesives, coatings and inks industrial sector.

The enclosed application addresses the proposed use of nPB specifically at Lake City Army Ammunition Plant as a solvent in the sealant applied to the mouth of the ammunition case prior to bullet insertion.


If you have any questions or comments, please contact Julie Bounds, 816-796-5193.

Sincerely,

T.J. Herman
Manager
Environmental Engineering

JAB
Encl.
L:\media\air\SNAP app for nPB

Cc: Phil Shuster
Karen Davies
File: Air

 <div style="text-align: center;"> United States ENVIRONMENTAL PROTECTION AGENCY Washington, DC 20460 </div>	AGENCY USE ONLY OMB Control No.: 2060-0226 Expires: 4/30/00
<div style="text-align: center;"> TSCA/SNAP ADDENDUM for Significant New Alternatives </div>	Date of Receipt: <div style="font-size: 1.5em; font-weight: bold;">JUL 14 2003</div>
When completed send this form to: SNAP DOCUMENT CONTROL OFFICER OFFICE OF AIR AND RADIATION, 6205 J U.S. EPA 401 M STREET, SW WASHINGTON, DC 20460	Date 90 Day Review Begins: Date Review Completed: PMN Document Control Number
Enter the total number of pages in your SNAP information Notice:	SNAP Document Control No. <div style="font-size: 1.2em; font-weight: bold;">VI-D-301</div>
INTRODUCTION	
<p>GENERAL INSTRUCTIONS</p> <p>This form may be used in conjunction with the Premanufacture Notice for new chemical substances (EPA Form 7710-25 (Rev. 1-19)) to submit chemicals for review under the Significant New Alternatives Policy program as alternatives to Class I and II ozone-depleting substances. In addition to the information provided in the Premanufacture Notice, the Agency is requesting submitters provide information on the following topics. This information will assist EPA in assessing the acceptability of the chemical as an alternative to ozone-depleting substances as required by Section 612 of the Clean Air Act. Please see the Guidance Manual for additional information on overlap between the SNAP and TSCA PMN programs and on completing this form.</p> <p>To facilitate Agency review of alternatives, both this form and the complete Premanufacture Notice form (including the physical and chemical properties worksheet) must be filled out as completely as possible. Please provide all information requested to the extent that it is known or reasonably ascertainable. Make reasonable estimates if actual data are unavailable.</p> <p>All submissions must be provided in three complete copies. If information is to be claimed as confidential, all confidential information must be excised from one of the copies which will be placed in the public file; the other two copies must include the confidential material. If no claims of confidentiality are made for the submission, all copies must be identical.</p> <p>Anyone submitting information must assert a claim of confidentiality at the time of submission for any data which is to be treated as Confidential Business Information (CBI). Substantiation of this claim must also be provided at this time. All information claimed as CBI will be treated in a manner consistent with 40 CFR Part 2, Subpart B. Failure to assert a claim of confidentiality at the time of submission may result in disclosure of the information by the Agency without further notice.</p> <p>Information submitted as CBI may be accessed by companies designated as Authorized Representatives of the United States Environmental Protection Agency (EPA) under an EPA contract for the purpose of assisting EPA in the development and implementation of national regulations for the protection of stratospheric ozone, including the development of the SNAP program. These Authorized Representatives may have access to any information received by the Stratospheric Protection Division within the EPA Office of Atmospheric Programs for use in reviewing the need for possible control of any substance, practice, process or activity that may reasonably be anticipated to affect stratospheric ozone. In general, this information will pertain to the feasibility, costs, and environmental and health impacts of using substitutes for Class I and Class II substances. Access to such information is necessary to ensure that these companies can complete the work required by the contract.</p> <p>Authorized Representatives of the Administrator are subject to the provision of 42 U.S.C. 7414(c) regarding confidential business information as implemented by 40 CFR 2.301(h)</p>	

Part I - GENERAL INFORMATION	
Section A - SUBMITTER IDENTIFICATION	
1. (a) Person Submitting Notice (in U.S.)	
Karen Davies <small>Name of Authorized Official</small>	President <small>Title</small>
Alliant Lake City Small Caliber Ammunition Co., LLC <small>Company/Organization</small>	816-796-7114 <small>Telephone & Fax Numbers</small>
P.O. Box 1000, Independence, MO 64051 <small>Mailing Address</small>	816-796-5218 <small>Telephone & Fax Numbers</small>
(b) Agent (if applicable)	
<small>Name of Authorized Official</small> 	<small>Title</small>
<small>Company/Organization</small> 	
<small>Mailing Address</small> 	<small>Telephone & Fax Numbers</small>
(c) Joint Submitter (if applicable)	
<small>Name of Authorized Official</small> 	<small>Title</small>
<small>Company/Organization</small> 	
<small>Mailing Address</small> 	<small>Telephone & Fax Numbers</small>
2. Technical Contact (in U.S.)	
Julie Bounds <small>Name of Authorized Official</small>	Environmental Engineer <small>Title</small>
Alliant Lake City Small Caliber Ammunition Co., LLC <small>Company/Organization</small>	816-796-5193 <small>Telephone & Fax Numbers</small>
P.O. Box 1000, Independence, MO 64051 <small>Mailing Address</small>	816-796-5197 <small>Telephone & Fax Numbers</small>
3. If you have had a prior communication with EPA concerning this notice, note the date and type of communication (letter, phone, etc.) and the EPA staff person's name:	
Mark (X) if None <u>6/25/03</u> <input type="checkbox"/> phone conversation with Margaret Sheppard	

Mark (X) this box if this page contains CBI ☐

Part II - ALTERNATIVE-SPECIFIC INFORMATION

1. Name of chemical (preferably IUPAC nomenclature) and molecular formula.

N - Propyl Bromide $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$

Cas#106-94-5

2. Generic name (if chemical name of substitute is declared Confidential Business Information)

NA

3. End-uses and ozone-depleting substances (ODSs) being replaced:

(a) Describe each industrial sector and end-use that may be reasonably anticipated for the alternative.

(b) Identify the ODS and the quantity of substitute needed to replace it for each end-use (replacement ratio).

a)Adhesives, coatings & inks; end use - coatings

Specific use at Lake city Army Ammunition Plant, as a solvent in a sealant applied to the mouth of the ammunition case prior to bullet insertion.

b)1,1,1, - trichloroethane; the replacement ratio is approximately 1:1.

The estimated maximum potential usage is 20,638 gallons,with an estimated annual usage of 1868 gallons.

4. Ozone-depleting Potential (ODP):

(a) Provide the alternative's 100-year ODP relative to CFC-11, known.

(b) Provide source of ODP or any additional data on the ODP of the alternative (e.g. atmospheric lifetime, chlorine or bromine loading potentials). Reference the source of this information and attach any supporting documentation.

Reference

Federal Register Volume 68 Number 106

Tuesday, June 3, 2003;page 33284.

Mark (X) this box if this page contains CBI ☐

Part II - ALTERNATIVE-SPECIFIC INFORMATION (Continued)

5. Global-warming Characteristics

- (a) Provide the alternative's GWP relative to carbon dioxide over 100-, 500-, and 1000-year time horizon, if known.
- (b) If known, provide the alternative's expected impact on energy efficiency relative to the ODS it is replacing (e.g. +/- X%). Also include results of any testing or modeling done (both theoretical and actual testing).
- (c) Provide source of GWP or any additional data on the GWP of the alternative, such as the atmospheric lifetime, infrared absorption spectrum, and infrared absorption capacity.

Reference

**Federal Register Volume 68, Number 106
Tuesday, June 3, 2003; page 33284**

6. Flammability Concerns:

- (a) Provide the alternative's flash point, the upper and lower flammability limits (UFL & LFL) in percent by volume, the heat of combustion kJ/kg, maximum pressure (PSI), and maximum rate of pressure rise.
- (b) Provide any additional information on flammability concerns. For example, if any abatement techniques are being used to minimize the risks associated with flammable substances or mixtures, detail those techniques below.

Reference

**Federal Register Volume 68, Number 106
Tuesday, June 3, 2003; page 33284**

7. Cost of Alternative:

- (a) Estimate the cost per pound for the alternative chemical. What information was used as the basis for this cost estimate?
- (b) Describe any new equipment and use profiles. If retrofitting of existing equipment is required, detail changes in technologies needed to use the alternative and address any materials compatibility issues. Provide information on any new materials, equipment lifetime, changes in labor, and energy costs.

a) Estimated cost per pound is approximately \$3.00/lb based on a cost estimate from a chemical supplier.

b) This is a drop in replacement for the existing ODS. No equipment modification is needed.

Mark (X) this box if this page contains CBI ☐

[illegible]

Mark (X) this box if this page contains CBI ☐

Part V - CERTIFICATION

I certify to the best of my knowledge and belief that:

1. All information provided in this notice is complete and truthful as of the date of the submission.
2. I am submitting with this notice all test data in my possession or control and a description of all other data known to or reasonably ascertainable by me.
3. If this is a submission of a new alternative, the company name in Part I, Question 1a of this notice:
 - (a) intends to manufacture, formulate, import, market, or use a new alternative to a Class I or Class II ozone-depleting substance which is identified in Part I, Section B, Question 2.
 - (b) seeks an acceptability determination on a new alternative(s) to a Class I or Class II ozone-depleting substance, which is identified in Part I, Section B, Question 2.
4. The accuracy of the statements made in this notice reflects my best prediction of the anticipated facts regarding the alternative described herein. Any knowing and willful misinterpretation is subject to criminal penalty pursuant to section 113(c) of the Clean Air Act and 18 U.S.C. §1001.

Signature and Title of Authorized Official (Original Signature Required): *T. J. H. 7-7-03*
Date *Karen Davies 7/9/03*
President

Signature of Agent (Where Applicable):
Date

For persons filing a SNAP Information Notice, the reporting burden is estimated to average 150 hours per year. For persons filing a TSCA/SNAP Addendum, the reporting burden is estimated to average 46 hours per year. Burden means that total time, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instruction; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, OPPE Regulatory Information Division, U.S. Environmental Protection Agency (2137), 401 M Street, S.W., Washington, DC 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

REPORT OF INDUSTRIAL HYGIENE SURVEY

FOR

**ALLIANT TECHSYSTEMS
BUILDINGS #1 - DEPARTMENT 115
LAKE CITY AMMUNITION PLANT
INDEPENDENCE, MISSOURI**

PREPARED BY



**6501 E. Commerce Drive, Suite 230
Kansas City, MO 64120**

December 23, 2002



OGC-TEC Inc.

December 23, 2002

Mr. Dave Pojmann, Manager
Loss Prevention & Industrial Hygiene
Alliant TechSystems
Lake City Army Ammunition Plant
P.O. Box 340
Independence, MO 64051-0340

**Subject: Industrial Hygiene Survey
Alliant TechSystems
Building #1 - Department 115 Priming
Lake City Army Ammunition Plant**

Dear Mr. Pojmann:

Thank you for the opportunity to provide Alliant TechSystems with the subject survey. The following is our report.

BACKGROUND

As requested, OCCU-TEC, Incorporated conducted the subject monitoring at Building #1 Lake City Army Ammunition Plant, Independence, Missouri. Airborne concentrations of methyl chloroform, and 1-bromopropane were assessed. Temperature and relative humidity were also recorded. The monitoring was conducted on December 10, 2002.

EXPERIMENTAL

Representative area air samples were obtained in Department 115 Priming to assess airborne concentrations of the subject contaminants. The samples were obtained in accordance with the "National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods" and/or protocol specified by the American Industrial Hygiene Association (AIHA) accredited laboratory.

The samples were submitted, via overnight delivery service, to the National Loss Control Service Corporation Laboratory (NATLSCO) for analyses. NATLSCO is accredited by the AIHA for analyses of industrial hygiene samples.

Temperature and relative humidity of each sample location were measured with a Taylor 1330 Pocket Sling Psychrometer.

RESULTS AND DISCUSSION

The temperature within the areas sampled was approximately 68 degrees Fahrenheit. Relative humidity was 32%.

Methyl Chloroform

The analytical data indicate that the concentrations of methyl chloroform were below the current Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) and American Conference of Governmental Industrial Hygiene (ACGIH) recommended Threshold Limit Value (TLV) of 350 ppm for an 8-hour time-weighted average (TWA) exposure. The area sample concentrations were 7.40 ppm or less.

1-Bromopropane

The analytical data indicate that the concentrations of 1-bromopropane were below the manufacturer's recommended 8-hour TWA of 25 ppm. Currently there is no OSHA PEL or ACGIH TLV for an exposure. The area sample concentrations were 3.70 ppm or less.

PELs and TLVs are basically the concentration of a contaminant in the workplace air that the average, healthy person can be exposed to eight hours a day, five days a week, 52 weeks a year and suffer no harmful effects. Certain hypersensitive persons and/or persons with pre-existing medical conditions, however, may be affected by concentrations in the air at levels much lower than the "average person" would be affected. TLVs are recommended values and PELs are mandatory limits.

ATTACHMENTS

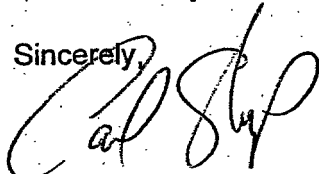
A summary of the sample results and the corresponding PELs, TLVs, and manufacturer's recommended exposure limits are given in Table 1. The data are presented by sample number and location, and include the TLV and PEL for each analyte.

Appendix A, Air Sample Data Sheets, is attached and includes data pertaining to each sample. Data include location of sample, total sampling time, sample flow rate, sample volume, temperature and relative humidity measurements. Pump calibration information can also be found in this attachment.

Appendix B, Laboratory Results, is attached and gives the laboratory data from NATLSCO.

OCCU-TEC appreciates the opportunity to work with you on this project. Please contact us if we can be of further assistance. We look forward to future opportunities to assist you and Alliant TechSystems in assuring the safety and health of your employees.

Sincerely,



Carl L. Sharp
OCCU-TEC, Inc.

Attachments

OCOU-TEC Incorporated

TABLE 1
AIR SAMPLING DATA SUMMARY

Client: Alliant TechSystems

Sampling Date: December 10, 2002

Analyte: Methyl chloroform & 1-Bromopropane

SAMPLE NUMBER	EMPLOYEE/ AREA	ANALYTE	MEASURED CONCENTRATION	OSHA PEL	% of PEL	Manufacture TWA	% of TLV
12004.09-01	15 Feet from Post 560-161	1-Bromopropane	3.7 PPM	N/A	N/A	25 PPM	14.8%
12004.09-01	15 Feet from Post 560-161	Methyl chloroform	5.6 PPM	350 PPM	1.6%	350 PPM	1.6%
12004.09-02	Post 560-155	1-Bromopropane	0.87 PPM	N/A	N/A	25 PPM	3.5%
12004.09-02	Post 560-155	Methyl chloroform	5.2 PPM	350 PPM	1.5%	350 PPM	1.5%
12004.09-03	Post 560-161	1-Bromopropane	2.6 PPM	N/A	N/A	25 PPM	10.4%
12004.09-03	Post 560-161	Methyl chloroform	5.4 PPM	350 PPM	1.5%	350 PPM	1.5%
12004.09-04	Post 560-157	1-Bromopropane	1.7 PPM	N/A	N/A	25 PPM	6.8%
12004.09-04	Post 560-157	Methyl chloroform	7.4 PPM	350 PPM	2.1%	350 PPM	2.1%

TLV = Threshold Limit Value
PEL = Permissible Exposure Limit
ppm = Parts Per Million

ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
mg/m3 = milligrams per cubic meter

APPENDIX A
AIR SAMPLE DATA SHEETS

AIR SAMPLE DATA SHEET

STUDY NO.:	12004.09-01	TYPE:	<input type="radio"/> P <input checked="" type="radio"/> A <input type="radio"/> B	DATE:	12/10/2002
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CONDUCTOR:	Carl Sharp	COMPANY:	Alliant Techsystems
LOCATION:	Building #1	DEPARTMENT:	Dept. 115 Priming
EMPLOYEE:	N/A	FOREMAN:	Ron Fleshman
EMPLOYEE ID:	N/A	SUPERVISOR:	N/A
PROTECTION:	Ear plugs, steel toed conductive boots, and Nomex coat.		

DRY BULB TEMP:	68 ° F	Wet Bulb Temp:	52 ° F	REL. HUMIDITY:	32 %	TIME:	11:00 HRS
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PUMP TYPE:	MSA Elf	PUMP NO.:	LCAAP 98930
PRE-TEST CAL:	0.102 LPM	POST-TEST CAL:	0.116 LPM
START:	10:55 HRS	STOP:	15:30 HRS
TOTAL:	275 MIN	VOLUME:	29.98 L

SAMPLING MEDIA:	Charcoal Tube(CT2)
SAMPLE FOR:	1-bromopropane, methyl chloroform
RESULTS:	5.6 PPM, 3.7 PPM
PEL:	Not Established, 350 PPM
TLV:	Not Established, 350 PPM

DESCRIPTION:

Placed sample on column 560-161 between unit #4(running Abzol) and unit #5(not running any solvent). Sample is approximately 6 ft. off the ground. Flammable storage cabinet is about 30 ft. away and the doors were kept closed throughout the day.

PRIME CONTACT AND TELEPHONE NUMBER:

David Pojmann (816) 796-7101 x7446

LEGEND:

PPM = PARTS PER MILLION
TWA = TIME WEIGHTED AVERAGE
MG/M3 = MILLIGRAMS PER CUBIC METER

A = AREA SAMPLE
P = PERSONAL SAMPLE
B = BULK SAMPLE

PEL = PERMISSIBLE EXPOSURE LIMIT
TLV = THRESHOLD LIMIT VALUE
N/A = NOT APPLICABLE

AIR SAMPLE DATA SHEET

STUDY NO.:	12004.09-02	TYPE:	<input type="radio"/> P <input checked="" type="radio"/> A <input type="radio"/> B	DATE:	12/10/2002
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CONDUCTED BY:	Carl Sharp	COMPANY:	Alliant Techsystems
LOCATION:	Building #1	DEPARTMENT:	Dept. 115 Priming
EMPLOYEE:	N/A	FOREMAN:	Ron Fleshman
EMPLOYEE:	N/A	SUPERVISOR:	N/A
PROTECTIONS:	Ear plugs, steel toed conductive boots, and Nomex coat.		

DRY BULB TEMP:	68 ° F	Wet Bulb Temp:	52 ° F	REL. HUMIDITY:	32 %	TIME:	11:00 HRS
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PUMP TYPE:	MSA Elf	PUMP NO.:	LCAAP 98930
PRE-TEST CAL:	0.125 LPM	POST-TEST CAL:	0.128 LPM
START:	11:05 HRS	STOP:	15:30 HRS
TOTAL:	265 MIN	VOLUME:	33.52 L

SAMPLE TYPE:	Charcoal Tube(CT2)
SAMPLE NAME:	1-bromopropane, methyl chloroform
RESULTS:	5.2 PPM, 0.87 PPM
REL:	Not Established, 350 PPM
TLV:	Not Established, 350 PPM

DESCRIPTION: Placed sample on column 560-155 between unit #2 and unit #3, both running methyl chloroform. Sample is approximately 6 ft. off the ground. Flammable storage cabinet is about 20 ft. away and the doors were kept closed throughout the day.

PRIME CONTACT AND TELEPHONE NUMBER:

David Pojmann (816) 796-7101 x7446

LEGEND:

PPM = PARTS PER MILLION

TWA = TIME WEIGHTED AVERAGE

MG/M3 = MILLIGRAMS PER CUBIC METER

A = AREA SAMPLE

P = PERSONAL SAMPLE

B = BULK SAMPLE

REL = PERMISSIBLE EXPOSURE LIMIT

TLV = THRESHOLD LIMIT VALUE

N/A = NOT APPLICABLE

AIR SAMPLE DATA SHEET

STUDY NO.:	12004.09-03	TYPE:	o P x A o B	DATE:	12/10/2002
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CONDUCTED BY:	Carl Sharp	COMPANY:	Alliant Techsystems
LOCATION:	Building #1	DEPARTMENT:	Dept. 115 Priming
EMPLOYEE:	N/A	COREMAN:	Ron Fleshman
EMPLOYEE ID:	N/A	SUPERVISOR:	N/A
PROTECTION:	Ear plugs, steel toed conductive boots, and Nomex coat.		

DRY BULB TEMP:	68 ° F	Wet Bulb Temp:	52 ° F	REL. HUMIDITY:	32 %	TIME:	11:00 HRS
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PUMP TYPE:	MSA Elf	PUMP NO.:	LCAAP 98930				
PRE-TEST CAL:	0.242 LPM	POST-TEST CAL:	0.239 LPM	FLOW RATE:	0.241 LPM		
START:	11:05 HRS	STOP:	15:30 HRS	TOTAL:	265 MIN	VOLUME:	63.73 L

SAMPLING MEDIA:	Charcoal Tube(CT2)
SAMPLE FOR:	1-bromopropane, methyl chloroform
RESULTS:	5.4 PPM, 2.6 PPM
PEL:	Not Established, 350 PPM
TLV:	Not Established, 350 PPM

DESCRIPTION: Placed sample about 15 feet from column 560-161 and attached to the side of unit #4(running Abzol). Sample is approximately 6 ft. off the ground. Flammable storage cabinet is about 30 ft. away and the doors were kept closed throughout the day.

PRIME CONTACT AND TELEPHONE NUMBER:

David Pojmann (816) 796-7101 x7446

LEGEND:

PPM = PARTS PER MILLION

TWA = TIME WEIGHTED AVERAGE

MG/M3 = MILLIGRAMS PER CUBIC METER

A = AREA SAMPLE

P = PERSONAL SAMPLE

B = BULK SAMPLE

PEL = PERMISSIBLE EXPOSURE LIMIT

TLV = THRESHOLD LIMIT VALUE

N/A = NOT APPLICABLE

AIR SAMPLE DATA SHEET

STUDY NO.: 12004.09-04	TYPE: o P x A o B	DATE: 12/10/2002
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CONDUCTED BY:	Carl Sharp	COMPANY:	Alliant Techsystems
LOCATION:	Building #1	DEPARTMENT:	Dept. 115 Priming
EMPLOYEE:	N/A	FOREMAN:	Ron Fleshman
EMPLOYEE ID:	N/A	SUPERVISOR:	N/A
PROTECTION:	Ear plugs, steel toed conductive boots, and Nomex coat.		

DRY BULB TEMP: 68 ° F	Wet Bulb Temp: 52 ° F	REL. HUMIDITY: 32 %	TIME: 11:00 HRS
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PUMP TYPE: MSA Elf	PUMP NO.: LCAAP 98930		
PRE-TEST CAL: 0.112 LPM	POST-TEST CAL: 0.115 LPM	FLOW RATE: 0.114 LPM	
START: 11:05 HRS	STOP: 15:30 HRS	TOTAL: 265 MIN	VOLUME: 30.08 L

SAMPLING MEDIA:	Charcoal Tube(CT2)
SAMPLE FOR:	1-bromopropane, methyl chloroform
RESULTS:	7.4 PPM, 1.7 PPM
PEL:	Not Established, 350 PPM
TLV:	Not Established, 350 PPM

DESCRIPTION: Placed sample on column 560-157 between unit #4(running methyl chloroform) and unit #3(running Abzol). Sample is approximately 6 ft. off the ground. Flammable storage cabinet is about 20 ft. away and the doors were kept closed throughout the day.

PRIME CONTACT AND TELEPHONE NUMBER:

David Pojmann (816) 796-7101 x7446

LEGEND:

PPM = PARTS PER MILLION
TWA = TIME WEIGHTED AVERAGE
MG/M3 = MILLIGRAMS PER CUBIC METER

A = AREA SAMPLE
P = PERSONAL SAMPLE
B = BULK SAMPLE

PEL = PERMISSIBLE EXPOSURE LIMIT
TLV = THRESHOLD LIMIT VALUE
N/A = NOT APPLICABLE



LABORATORY ANALYSIS REPORT

LABORATORY, K-2

1 Kemper Drive
Long Grove, IL 60049-0075
Phone (847) 320-2488
Fax (847) 320-4331
Toll Free (888) 576-7522

REPORT DATE DEC 20, 2002
SAMPLES REC'D DEC 13, 2002
REQUEST NUMBER 395046
PAGE NUMBER 1 OF 5

TO: CARL SHARP
OCCU-TEC, INC.
6501 E. COMMERCE
SUITE 230
KANSAS CITY
USA

MO 64120

SAMPLE	AIR VOLUME / ANALYSIS REQUESTED	MEDIA TYPE / RESULTS	ANALYZED DATE
12004.09-01	29.98 Liters METHYL CHLOROFORM (DE = 100%) 1-BROMOPROPANE (DE = 82%)	Charcoal Tube(600mg) micrograms Front Back Front Back 920 < 5.3 5.6 < 0.032 560 < 4.7 3.7 < 0.031	DEC 20, 2002
12004.09-02	33.52 Liters METHYL CHLOROFORM (DE = 100%) 1-BROMOPROPANE (DE = 82%)	Charcoal Tube(600mg) micrograms Front Back Front Back 950 < 5.3 5.2 < 0.029 150 < 4.7 0.87 < 0.028	DEC 20, 2002

COMMENTS:

IF PRESENT, DE MEANS DESORPTION EFFICIENCY

Respectfully submitted,

William M. Walsh, CIH, ROH
Director Environmental Health Services
Environmental Sciences Laboratory

ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION



LABORATORY ANALYSIS REPORT

LABORATORY, K-2

1 Kemper Drive
Long Grove, IL 60049-0075
Phone (847) 320-2488
Fax (847) 320-4331
Toll Free (888) 576-7522

REPORT DATE DEC 20, 2002
SAMPLES REC'D DEC 13, 2002
REQUEST NUMBER 395046
PAGE NUMBER 2 OF 5

TO: CARL SHARP
OCCU-TEC, INC.
6501 E. COMMERCE
SUITE 230
KANSAS CITY
USA

MO 64120

SAMPLE	AIR VOLUME / ANALYSIS REQUESTED	MEDIA TYPE	/ RESULTS	ANALYZED DATE	
12004.09-03	63.73 Liters	Charcoal Tube(600mg)		DEC 20, 2002	
		micrograms		PPM	
		Front	Back	Front	Back
		1900	< 5.3	5.4	< 0.015
12004.09-04	30.08 Liters	Charcoal Tube(600mg)		DEC 20, 2002	
		micrograms		PPM	
		Front	Back	Front	Back
		1200	< 5.3	7.4	< 0.032
	METHYL CHLOROFORM (DE = 100%)	250	< 4.7	1.7	< 0.031

**LABORATORY, K-2**

1 Kemper Drive
Long Grove, IL 60049-0075
Phone (847) 320-2488
Fax (847) 320-4331
Toll Free (888) 576-7522

LABORATORY ANALYSIS REPORT

REPORT DATE DEC 20, 2002
SAMPLES REC'D DEC 13, 2002
REQUEST NUMBER 395046
PAGE NUMBER 3 OF 5

TO: CARL SHARP
OCCU-TEC, INC.
6501 E. COMMERCE
SUITE 230
KANSAS CITY
USA

MO 64120

SAMPLE	AIR VOLUME / ANALYSIS REQUESTED	MEDIA TYPE / RESULTS	ANALYZED DATE
BLANK		Charcoal Tube (600mg) micrograms Front Back < 5.3 < 5.3 NONE DETECTED 1-BROMOPROPANE < 4.7 < 4.7 NONE DETECTED	DEC 20, 2002
	METHYL CHLOROFORM (DE = 100%) (BLANK)		
	1-BROMOPROPANE (DE = 82%) (BLANK)		

COMMENTS:

IF PRESENT, DE MEANS DESORPTION EFFICIENCY

Respectfully submitted,

William M. Walsh, CIH, ROH
Director Environmental Health Services
Environmental Sciences Laboratory.

ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

LABORATORY ANALYSIS REPORT



LABORATORY, K-2

1 Kemper Drive
Long Grove, IL 60049-0075
Phone (847) 320-2488
Fax (847) 320-4331
Toll Free (888) 576-7522

REPORT DATE DEC 20, 2002
SAMPLES REC'D DEC 13, 2002
REQUEST NUMBER 395046
PAGE NUMBER 4 OF 5

TO: CARL SHARP
OCCU-TEC, INC.
6501 E. COMMERCE
SUITE 230
KANSAS CITY
USA

MO 64120

LLD *	ANALYSIS REQUESTED	METHODOLOGY	CAS #
4.7	1-BROMOPROPANE CT	OSHA 07 GAS CHROMATOGRAPHY	106-94-5
5.3	METHYL CHLOROFORM CT	OSHA 07 GAS CHROMATOGRAPHY	71-55-6

COMMENTS:

CONCENTRATION CALCULATED USING AIR VOLUMES SUPPLIED BY CLIENT

- * LLD IS THE REPORTING LIMIT IN MICROGRAMS
- * MODIFICATIONS MAY BE MADE TO ABOVE METHODS TO OPTIMIZE RESULTS

- * UNLESS OTHERWISE NOTED, SAMPLES RECEIVED IN GOOD CONDITION
- * RESULTS ARE STRICTLY LIMITED TO SAMPLES ANALYZED

Respectfully submitted,

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Director Environmental Health Services
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	REQUEST CLIENT COMMENTS:	
		REF: PROJECT #12004.09.

Respectfully submitted,

William M. Walsh, CIH, ROH
Director Environmental Health Services
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